

Figure 1

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	10	20	30	40	50	60	70	
	-AVASLVMGSVVHATENEVTTOQVATSSNRANESQTEHRKAAKO-----						VDEYIKKML--Q--L	
SPB328(23F) Cbp	-AVASLVMGSVVHATEKEVTTQVATSSNKANKSQTEHMKAAKQ-----						VDEYIKKKL--Q--L	53
SPB365(23F) Cbp	-AVASLVMGSVVHATEKEVTTQVATSSNRANKSQTEHMKAAKQ-----						VDEYIKKKL--Q--L	53
SPB105(6B) CbpA	VAVASLVMGSVVHATEKEVTTQVATSSNRANESQAGHRKAAEQF-----						DEYIKIMI--Q--L	54
SPSJ12(19A) Cbp	-AVASLVMGSVVHATENEGTTQAPTSSNRGNESQAEHMKAAKQ-----						VDEYIEKML--Q--L	53
SPB331(14) CbpA	-VASLVMGSVVHATEKEVTTQVATSSNKANKSQTEHMKAAKQ-----						VDEYIKKKL--Q--L	52
SPR332(9V) CbpA	CTVASLVMGSVVHATENERTTQVPTSSNRGK--PERRKAAEQF-----						DEYINKMI--Q--L	51
ATCC2 CbpA trun	VAVASLVMGSVVHATEKEVTTQVPTSYNMAK--TEHRKAAQV-----						VDEYIEKMLREIQ--L	55
R6X(2) CbpA tru	-----ENEGSTQAATSSNMAK--TEHRKAAQV-----						VDEYIEKMLREIQ--L	40
SPSJ9(14) CbpA Y-	IASLFLGGVVHAE---GVRSENNPTVTSSGQDISKKYADE-----						VKSHLEKILSEIQTNL	54
ATCC6B CbpA tru	---ASLFLGGVVHAE---GVRSGNNSTVTSSGQDISKKYADE-----						VESHLOSILKDVNKNL	52
Ntype4 CbpA tru	CIVASLVMGSVVHATENEGATQVPTSSNRANESQAEQGEQPKKLDSE						RDKARKEVEEYVKKIVGESYAKS	70
ATCC4 CbpA trun	-IVASLVMGSVVHATENEGATQVPTSSNRANESQAEQGEQPKKLDSE						RDKARKEVEEYVKKIVGESYAKS	69
	80	90	100	110	120	130	140	
	DRRKHTQNVALLTKLGVIKTEYLHGLSVSKKKSEAELPSEIKA---KLDAAFEQFKKDTL-----							
SPB328(23F) Cbp	DRRKHTQNVGLLTKLGVIKTEYLHGLSVSKKKSEAELPSEIKA---KLDAAFEQFKKDTL-----							111
SPB365(23F) Cbp	DRRKHTQNVGLLTKLGVIKTEYLHGLSVSKKKSEAELPSEIKA---KLDAAFEQFKKDTL-----							111
SPB105(6B) CbpA	DRRKHTQNFALNIKLSRIKTEYLRKLVLEEKSKAELPSETKK---EIDAAFEQFKKDTNR-----							113
SPSJ12(19A) Cbp	DRRKHTQNVGLLTKLGAIKTEYLRGLSVSKEKSTAELPSEIKE---KLTAAFKQFKKDTL-----							111
SPB331(14) CbpA	DRRKHTQNVGLLTKLGVIKTEYLHGLSVSKKKSEAELPSEIKA---KLDAAFEQFKKDTL-----							110
SPR332(9V) CbpA	DKRKHTQNLAFNIQLSRIKTEYLVNGL---EKSEAELPSKIIKA---ELDAAFKQFKKDTL-----							106
ATCC2 CbpA trun	DKRKHTQNLAFNIQLSRIKTEYLVNGL---EKSEAELPSKIIKA---KLDAAFEQFKKDTL-----							110
R6X(2) CbpA tru	DRRKHTQNVALLTKLGVIKTEYLHGLSVSKKKSEAELPSEIKA---KLDAAFEQFKKDTL-----							98
SPSJ9(14) CbpA	DRSKHIKTNVNLIKLDIKRTYLYELNVLEDKSKAELPSKIIKA---ELDAAFEQFKKDTL-----							112
ATCC6B CbpA tru	KKVQHTQNAFNNKLSIKTKYLYELNVLEDKSKAELPSKIIKA---ELDAAFEQFKKDTL-----							113
Ntype4 CbpA tru	TKKRHTITVALVNLNLIKNEYLN--KIVESTSESQIQILMESRSKVDEAVSKFEKDS						SSSSSSSSSDSSTK	138
ATCC4 CbpA trun	TKKRHTITVALVNLNLIKNEYLN--KIVESTSESQIQILMESRSKVDEAVSKFEKDS						SSSSSSSSSDSSTK	137
	150	160	170	180	190	200	210	
	PTEPGKKVAEAEKKVVEEAKKK-----AEDQKEEDRRNYPTITYKTLELEIAESDVEV							
SPB328(23F) Cbp	PTEPGKKVAEAEKKVVEEAKKK-----AEDQKEEDRRNYPTINTYKTLELDIAESDVEV							162
SPB365(23F) Cbp	PTEPGKKVAEAEKKVVEEAKKK-----AEDQKEEDRRNYPTINTYKTLELDIAESDVEV							162
SPB105(6B) CbpA	TK--KTVAEAEKKVVEEAKKK-----AKAQKEEDRRNYPTINTYKTLELEIAESDVEV							161
SPSJ12(19A) Cbp	KPEKKVAEAEKKVVEEAKKK-----AEDQKEEDRRNYPTITYKTLELDIAESDVEV							160
SPB331(14) CbpA	PTEPGKKVAEAEKKVVEEAKKK-----AEDQKEEDRRNYPTITYKTLELDIAESDVEV							161
SPR332(9V) CbpA	PTEPEKKVAEAEKKVVEEAKKKVAEAKKKAKAQKEEDRRNYPTITYKTLDLEIAEFVVKV							164
ATCC2 CbpA trun	KLGEKVAEAEKKVVEEAKKK-----AKAQKEEDRRNYPTINTYKTLELEIAESDVEV							159
R6X(2) CbpA tru	KPEGEKVAEAKKVVEEAKKK-----AEDQKEEDRRNYPTINTYKTLELEIAEFVVKV							147
SPSJ9(14) CbpA	PTEPGKKVAEAKKVVEEAKKK-----AKAQKEEDRRNYPTITYKTLELEIAESDVEV							163
ATCC6B CbpA tru	STEPEKKVAEAKKVVEEAKKK-----AKDQKEEDRRNYPTITYKTLELEIAESDVEV							201
Ntype4 CbpA tru	PEASDTAKPNKPTEPGKEKVAEAKKVVEEAKKK-----AKDQKEEDRRNYPTITYKTLELEIAESDVEV							200
ATCC4 CbpA trun	PEASDTAKPNKPTEPGKEKVAEAKKVVEEAKKK-----AKDQKEEDRRNYPTITYKTLELEIAESDVEV							200

Figure 2A

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KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA
220 230 240 250 260 270 280
SPB328(23F) Cbp KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 227
SPB365(23F) Cbp KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 227
SPB105(6B) Cbp KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 230
SPSJ12(19A) Cbp KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 224
SPB331(14) Cbp KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 226
SPR332(9V) Cbp KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 229
ATCC2 CbpA trun KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 222
R6X(2) CbpA tru KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 213
SPSJ9(14) Cbp KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 227
ATCC6B CbpA tru KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 234
Ntype4 CbpA tru KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 261
ATCC4 CbpA trun KKAELVLVKEEAKESRDEGKINQAKAKVESKQAEATRLKIKTDREKAE--AKRRADAKLQEA---NVA 260

-SEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK
290 300 310 320 330 340 350
SPB328(23F) Cbp TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 297
SPB365(23F) Cbp TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 297
SPB105(6B) Cbp TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 300
SPSJ12(19A) Cbp TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 291
SPB331(14) Cbp TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 296
SPR332(9V) Cbp TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 295
ATCC2 CbpA trun TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 288
R6X(2) CbpA tru TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 283
SPSJ9(14) Cbp TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 293
ATCC6B CbpA tru TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 300
Ntype4 CbpA tru TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 328
ATCC4 CbpA trun TSEQDKPKGRRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAAEAKKVEEAKKKAEDQK 327

EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD
360 370 380 390 400 410 420
SPB328(23F) Cbp EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 367
SPB365(23F) Cbp EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 367
SPB105(6B) Cbp EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 370
SPSJ12(19A) Cbp EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 361
SPB331(14) Cbp EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 366
SPR332(9V) Cbp EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 365
ATCC2 CbpA trun EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 358
R6X(2) CbpA tru EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 353
SPSJ9(14) Cbp EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 363
ATCC6B CbpA tru EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 370
Ntype4 CbpA tru EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 398
ATCC4 CbpA trun EEDRRNYPNTYKTLLEIAESDVEVKKAELVLVKEEAKESRNEEKVKQAKAEVESKQAEATRLKIKTD 397

RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA
430 440 450 460 470 480 490
SPB328(23F) Cbp RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 437
SPB365(23F) Cbp RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 437
SPB105(6B) Cbp RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 437
SPSJ12(19A) Cbp RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 419
SPB331(14) Cbp RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 436
SPR332(9V) Cbp RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 432
ATCC2 CbpA trun RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 425
R6X(2) CbpA tru RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 411
SPSJ9(14) Cbp RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 423
ATCC6B CbpA tru RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 437
Ntype4 CbpA tru RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 458
ATCC4 CbpA trun RKKAEEE-AKRKAEEEDKVKEKPAEQPQAPAPQPEKPAEFPENPAPAP-PKPENPAEQPKAEPADQQA 457

EE--
SPB328(23F) Cbp EE 439
SPB365(23F) Cbp EE 437
SPB105(6B) Cbp EE 439
SPSJ12(19A) Cbp EE 419
SPB331(14) Cbp EE 437
SPR332(9V) Cbp EE 433
ATCC2 CbpA trun EE 427
R6X(2) CbpA tru EE 413
SPSJ9(14) Cbp EE 425
ATCC6B CbpA tru EE 439
Ntype4 CbpA tru EE 460
ATCC4 CbpA trun EE 459

Figure 2B

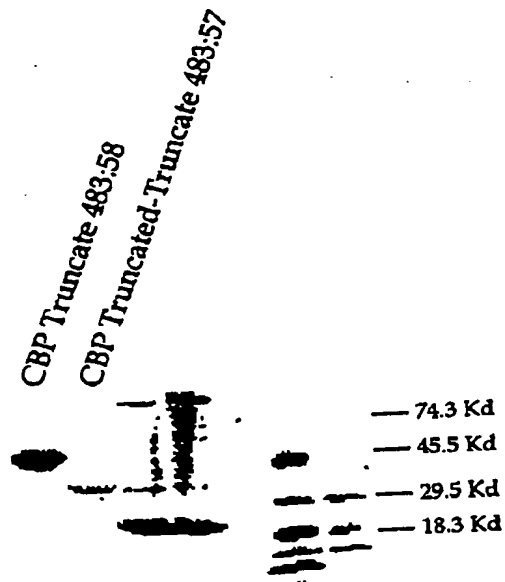


Figure 3

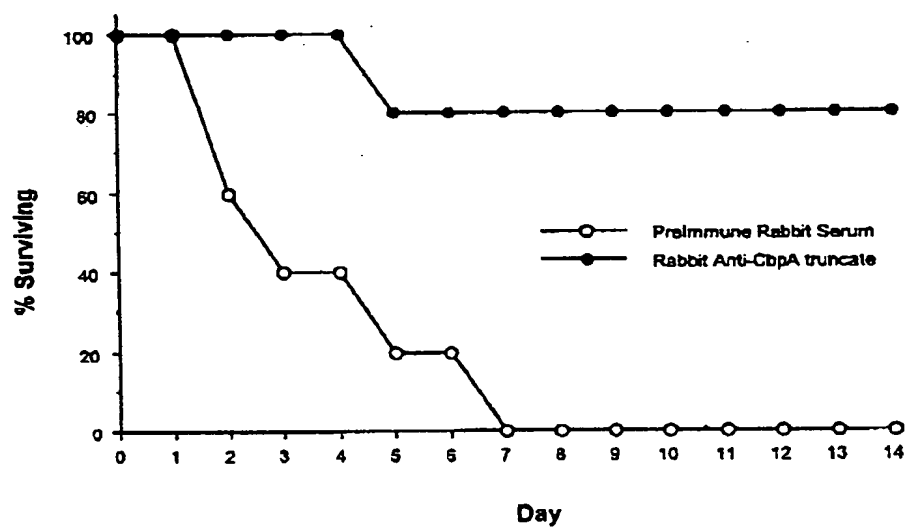


Figure 4

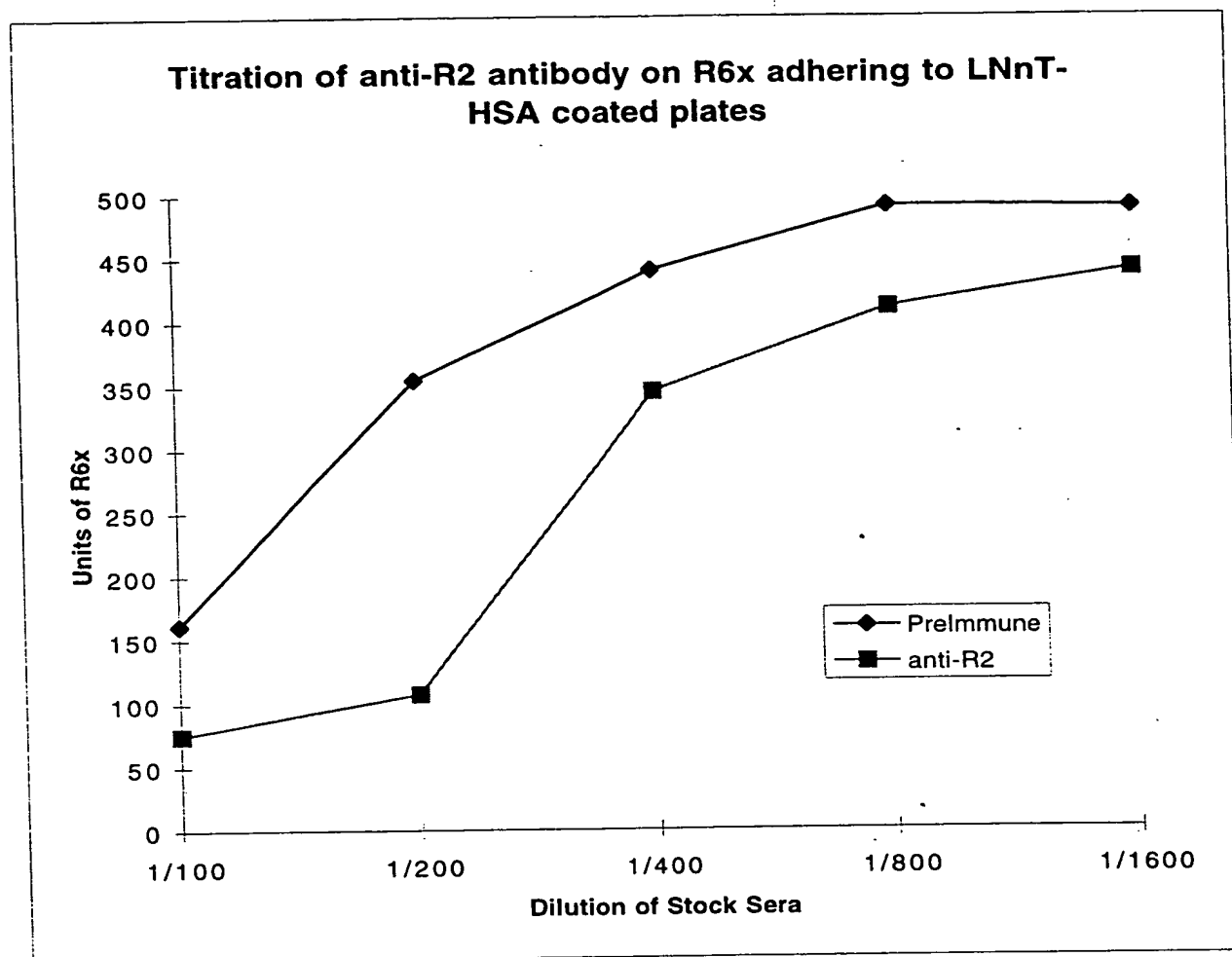


Figure 5

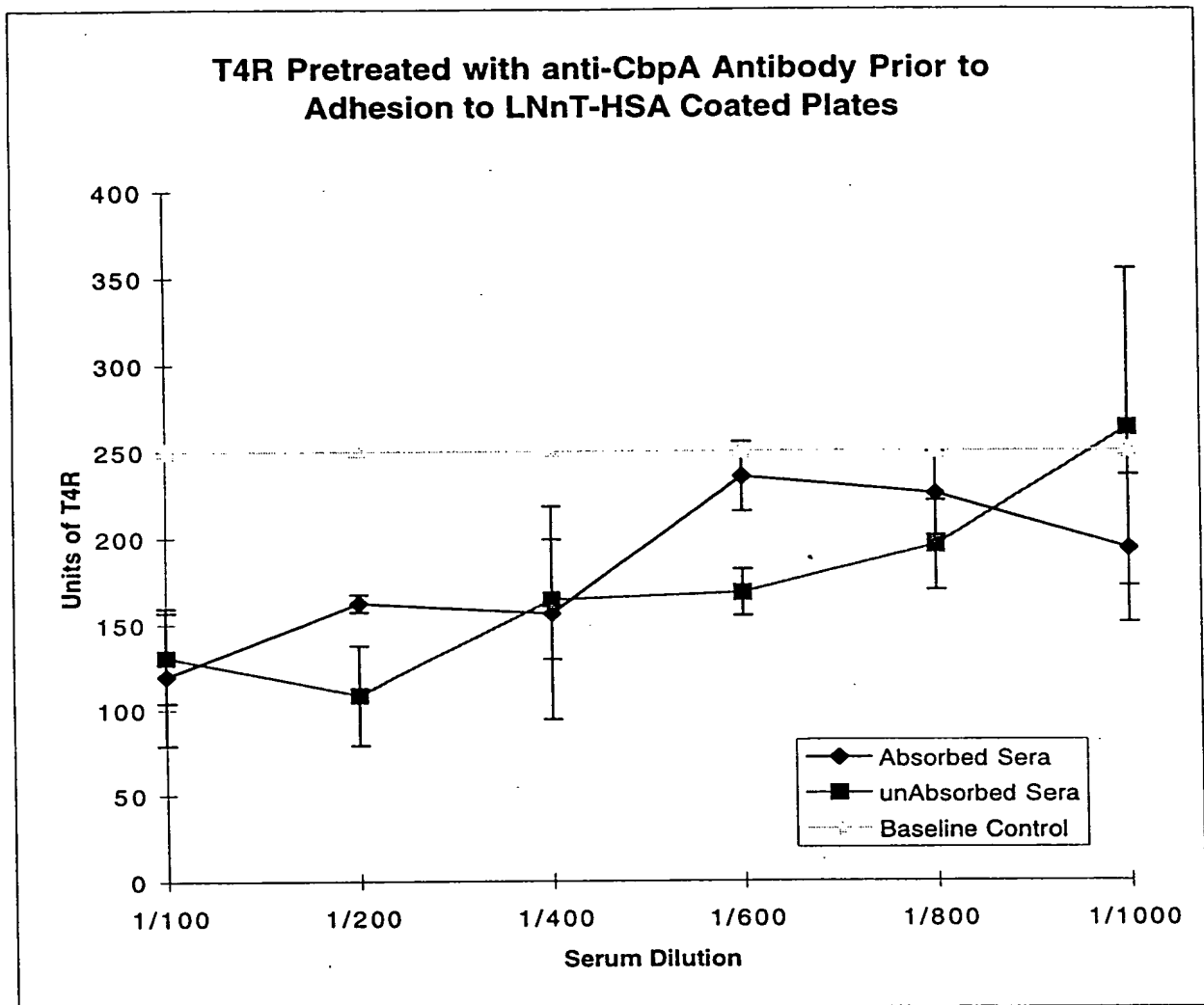


Figure 6

Active Protection

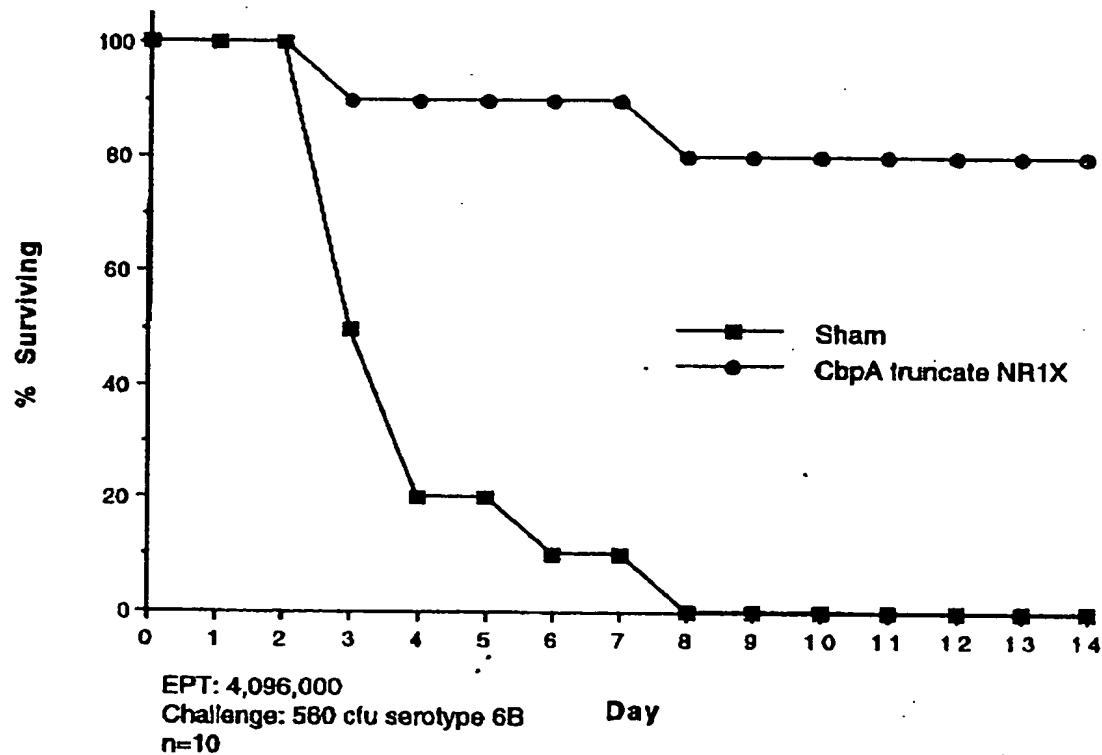


Figure 7

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